

Draft

**Initial Study for Proposed
Bay Area Air Quality Management District
Regulation 12, Rule 11
Flare Monitoring at Petroleum Refineries**

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Chapter 1

Introduction

Purpose of This Document

This initial study assesses the environmental effects (impacts) of the proposed adoption of new Regulation 12, Rule 11 by the Bay Area Air Quality Management District (BAAQMD or District) as required by the California Environmental Quality Act (CEQA) and in compliance with the State CEQA Guidelines (14 California Administrative Code §§1400 *et seq.*). An initial study serves as an informational document to be used in the decision-making process for a public agency that intends to carry out a project; it does not recommend approval or denial of the project analyzed in the document. BAAQMD, the lead agency under CEQA, must consider the impacts of the proposed new rule when determining whether to adopt the rule.

Scope of This Document

This document evaluates the proposed rule's impacts on the following resource areas:

- aesthetics,
- agricultural resources,
- air quality,
- biological resources,
- cultural resources,
- geology and soils,
- hazards and hazardous materials,
- hydrology and water quality,
- land use planning,
- mineral resources,
- noise,
- population and housing,
- public services,

- recreation,
- transportation/traffic, and
- utilities and service systems.

The impacts on these resource areas are evaluated using the initial study checklist in chapter 3; each resource area is divided into several topics designated by letter. The level of significance of an impact on a resource topic is indicated through the use of the terms discussed below.

Impact Terminology

The following terminology is used in this initial study to describe the levels of significance of impacts that would result from the proposed new rule.

- A conclusion of *no impact* is appropriate when the analysis concludes that there would be no impact on a particular resource topic.
- An impact is considered *less than significant* if the analysis concludes that an impact on a particular resource topic would not be significant (i.e., would not exceed certain criteria or guidelines established by BAAQMD).
- An impact is considered *less than significant with mitigation incorporated* if the analysis concludes that that an impact on a particular resource topic would be significant (i.e., would exceed certain criteria or guidelines established by BAAQMD) but would be reduced to a less-than-significant level through the implementation of mitigation.

Organization of This Document

The content and format of this document, described below, are designed to meet the requirements of CEQA.

- Chapter 1, “Introduction,” identifies the purpose, scope, and terminology of the document.
- Chapter 2, “Description of the Proposed Rule,” provides background information on Regulation 12, Rule 11, describes the proposed rule, and describes the area and facilities that would be affected by the rule.
- Chapter 3, “Environmental Checklist,” presents the checklist responses for each resource topic. This chapter includes a brief setting description for each resource area and identifies the proposed rule’s impacts on the resources topics listed in the checklist.
- Chapter 4, “References Cited,” identifies all printed references and personal communications cited in this report.

Chapter 2

Description of the Proposed Rule

Background

Proposed BAAQMD Regulation 12, Rule 11: Flare Monitoring at Petroleum Refineries is intended to implement control measure SS-15 from the Bay Area 2001 Ozone Attainment Plan (2001 Plan). This new rule would require refineries to monitor the volume and composition of gases burned in refinery flares, to calculate flare emissions based on this data, to determine the reasons for flaring, to report all of this information to the District, and to provide video monitoring of flares. The rule will lead to much more accurate estimates of flare emissions, will allow the District to refine its emission inventory for flaring, and will provide information that is likely to lead to reductions in flaring.

Flares are primarily intended as safety and pollution control devices. They burn gases that cannot be used by the refinery and prevent their direct release to the atmosphere. Though flares reduce these releases, they produce air pollutants through two mechanisms. First, though flare combustion is relatively efficient, flares, like all combustion devices, do not burn all of the gases directed to them. If large volumes of gas are burned, emissions of unburned gas can be significant. Second, the gases that are burned contain sulfur in varying amounts. Combustion oxidizes these sulfur compounds to form sulfur dioxide, a pollutant. In addition, combustion also produces relatively minor amounts of nitrogen oxides.

The BAAQMD has been studying Bay Area refinery flares and flaring since January 2002. The effort implements further study measure FS-8 from the 2001 Bay Area Ozone Attainment Plan. In the course of the study, it has become clear that better tools are needed to determine quantities and composition of gas burned in flares. All of the refineries currently monitor some parameters related to flare gas, but the data available varies greatly from refinery to refinery and makes reliable estimates of emissions difficult.

The proposed rule would require the monitoring of several basic parameters from which flare emissions can be calculated by assuming combustion efficiency. The primary parameters to be monitored are vent gas flow to the flare and vent gas composition.

For monitoring of the volume of gas directed to flares, the rule establishes range and accuracy requirements that can, at present, be met only by ultrasonic flow monitors.

These monitors are a relatively new technology that is improving rapidly and that offers the greatest accuracy among available monitoring technologies. These monitors are called time-of-flight (TOF) ultrasonic monitors. They determine flow velocity by measuring the time required for ultrasonic waves to travel in the flare gas from an "upstream" probe to a "downstream" probe and comparing the time to that required for the slower "upstream" trip. Two of the Bay Area refineries already have older ultrasonic monitors, but the rule would require all of the refineries to install newer, more sophisticated, and more accurate monitors.

For monitoring of flare gas composition, the rule allows two primary options: (1) collection of samples for subsequent lab analysis, or (2) use of continuous analyzers that sample gas and analyze it automatically. For the first option, samples can be collected either manually or with an auto-sampler. For the second option, several technologies are available: flame ionization detectors (FID), non-dispersive infrared (NDIR) spectrophotometry, and gas chromatography (GC). The rule sets forth procedures to be used for each of the options. Each approach involves different tradeoffs and costs. The sampling option relies upon procedures and technologies already in wide use, but it does not allow the nearly continuous data available from continuous analyzers. Continuous analyzers, on the other hand, offer nearly continuous data, but have not been proven in flare monitoring, where the vent gas stream may be relatively "dirty" and may vary greatly in composition and flow.

The rule applies to the 25 flares located at the five Bay Area refineries: ChevronTexaco in Richmond (9 flares), ConocoPhillips in Rodeo (2 flares), Valero in Benicia (3 flares), Tesoro in Avon (6 flares), and Shell in Martinez (5 flares). All of these flares are currently monitored for some parameter, typically flow or vent gas heating value. The proposed rule would require that all of the refineries upgrade their current monitoring equipment, but the new equipment necessary and the costs involved would vary greatly, depending upon the sophistication of the currently-installed equipment. The District has estimated a range of costs for a refinery based on costs for the various options allowed under the proposed rule. For a refinery with two flares and ultrasonic monitors already in place, costs could be relatively modest. For a refinery with a large number of flares and little or no existing monitoring equipment, costs could be considerable.

Affected Area

The proposed rule would apply to the areas under BAAQMD jurisdiction—all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties (approximately 5,600 square miles). All of the operations covered by the rule take place within existing refineries located in Contra Costa County and Solano County. In terms of physiography, the San Francisco Bay Area is characterized by a large, shallow basin surrounded by coastal mountain ranges tapering into sheltered inland valleys. The combined climatic and topographic factors result in increased potential for the accumulation of air pollutants in the inland valleys and reduced potential for buildup of air pollutants along the coast.

The U.S. Environmental Protection Agency (EPA) has set primary national ambient air quality standards for ozone and other air pollutants to define the levels considered safe for human health. The California Air Resources Board (CARB) has also set a California ozone standard. The federal and state standards are 12 and 9 parts per hundred million (pphm), respectively. The BAAQMD is designated as an unclassified nonattainment area for the federal 1-hour standard for ozone and as a nonattainment area for the state 1-hour standard. Under the requirements of the federal Clean Air Act (CAA), nonattainment areas must prepare ozone attainment demonstrations showing how they will attain the federal standard. The most recent federal attainment demonstration is the Bay Area 2001 Ozone Attainment Plan. Similarly, the California Clean Air Act of 1988 requires areas that do not comply with the standard to prepare ozone attainment plans. The most recent state plan is the Bay Area 2000 Clean Air Plan.

Both federal and state plans include measures to reduce emissions of the pollutants that form ozone. These measures may be already-adopted rules or proposals to adopt new regulations or amendments to existing regulations. As noted, Regulation 12, Rule 11 would implement control measure SS-15 from the most recent federal plan for the Bay Area (the 2001 Ozone Attainment Plan).

Chapter 3

Environmental Checklist

ENVIRONMENTAL CHECKLIST FORM

- 1. Project Title:** Bay Area Air Quality Management District (BAAQMD)
Proposed New Regulation 12, “Miscellaneous Standards
of Performance,” Rule 11, “Flare Monitoring at
Petroleum Refineries”
- 2. Lead Agency Name and Address:** Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109
- 3. Contact Person and Phone Number:** Bill Guy, Planning and Research Division,
415/749-4773 or wguy@baaqmd.gov
- 4. Project Location:** This rule applies to the area within the jurisdiction of the
Bay Area Air Quality Management District, which
encompasses all of Alameda, Contra Costa, Marin, San
Francisco, San Mateo, Santa Clara, and Napa Counties
and portions of southwestern Solano and southern
Sonoma Counties. The refineries affected by the rule
are located in Contra Costa County and Solano County.
- 5. Project Sponsor’s Name and Address:** (same as above)
- 6. General Plan Designation:** N/A
- 7. Zoning:** N/A
- 8. Description of Project:** See “Background” in Chapter 2
- 9. Surrounding Land Uses and Setting:** See “Affected Area” in Chapter 2
- 10. Other Public Agencies Whose
Approval Is Required:** None

Environmental Factors Potentially Affected:

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a “Potentially Significant Impact”), as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

Determination:

On the basis of this initial evaluation:

- ☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have an impact on the environment that is “potentially significant” or “potentially significant unless mitigated” but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

 Signature

 Date

 Printed Name

 For

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
I. AESTHETICS.					
	Would the project:				
a.	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. In terms of physiography, the Bay Area is characterized by a large, shallow basin surrounded by coastal mountain ranges. Because the area of coverage is so vast (approximately 5,600 square miles), land uses vary greatly and include commercial, industrial, residential, and agricultural uses.

Discussion of Impacts

- a–c. The monitoring equipment that would have to be installed to comply with the proposed rule would be installed within existing refineries and at locations on the flare header near each flare. No alterations to the refineries that could affect scenic resources or degrade the visual character or quality of a site are anticipated. There is no impact.
- d. No additional sources of light would be required for the facilities under the proposed rule. The proposed rule would not alter existing lighting requirements in any way. Existing light sources are expected to be sufficient. There is no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
II. AGRICULTURAL RESOURCES.				
In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

As described under “Aesthetics,” land uses within the jurisdiction of the BAAQMD vary greatly and include agricultural lands. Some of these agricultural lands are under Williamson Act contracts.

Discussion of Impacts

- a–c. The proposed rule would not require conversion of existing agricultural land to other uses. The proposed rule would not conflict with existing agriculture-related zoning designations or Williamson Act contracts. Williamson Act lands within the boundaries of the BAAQMD would not be affected. No effects on agricultural resources are expected because the proposed rule would apply to existing refinery operations. Because no changes in refinery locations or facilities are expected, there is no potential for conversion of farmland or conflicts related to agricultural uses or land under a Williamson Act contract. There is no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
III. AIR QUALITY.					
	When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a.	Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Existing Conditions

The pollutants of greatest concern in the BAAQMD are various components of photochemical smog (ozone and other pollutants) and particulate matter less than or equal to 10 microns in diameter (PM₁₀). Ozone, a criteria pollutant, is formed from a reaction of volatile organic compounds (VOCs) and NO_x in the presence of ultraviolet light (sunlight).

As discussed in Chapter 2 ("Affected Area"), the Bay Area is classified as a nonattainment area for both the California and federal ozone standards. Though the Bay Area currently has an attainment record for the federal standard, it has not applied for redesignation to attainment and is still subject to occasional violations of the federal standard. Violations of the California standard occur with greater frequency because of the greater stringency of that standard.

The precursor chemicals that form ozone are volatile organic compounds (VOCs) and nitrogen oxides (NO_x). Some of these volatile organic compounds are toxic compounds and some are known carcinogens. The BAAQMD maintains a network of monitoring stations to monitor certain toxic compounds in ambient air. In addition, the California Air Resources Board (CARB) maintains several monitoring stations in the Bay Area as part of a statewide toxics monitoring effort. All of the stations monitor for benzene, carbon tetrachloride, chloroform, ethylene dibromide, ethylene dichloride, methyl tert butyl ether (MTBE), methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and vinyl chloride. The CARB monitoring covers several additional gaseous compounds (1,3-butadiene, acetaldehyde, and formaldehyde) and several particulate toxics (chromium, nickel, PAHs, and lead). The BAAQMD has calculated the cancer risks associated with exposure to Bay Area average ambient levels in 2000 for these gaseous and particulate toxics to be 167 in one million. The total lifetime risk of cancer from all causes is generally regarded as 300,000 to 400,000 in one million.

There is increasing evidence that exposure to emissions from diesel-fueled engines may exceed the risks attributed to the toxics monitored by the BAAQMD and CARB networks. Based on CARB estimates of population-weighted average ambient diesel PM concentration for the Bay Area in 2000, and the best-estimate cancer potency factor adopted by the California Office of Environmental Health Hazard Assessment (OEHHA), the average cancer risk associated with exposure to diesel particulate matter is 450 in one million.

The mean ambient levels of monitored toxics are listed in the table below and compared to the mean ambient levels for 3 monitoring stations in Contra Costa County. The Richmond station is located on 7th Street downwind from the ChevronTexaco refinery and the Richmond Parkway in Richmond. The Crockett station is located at the end of Kendall Avenue generally downwind of the ConocoPhillips refinery. There are two Concord stations, and the values listed here are for the station on Treat Boulevard, downwind of Highways 680 and 4. The only notable differences in values are for toluene, for which ambient levels are higher than the Bay Area mean for the Concord and Richmond stations. Toluene emissions are generally associated with motor vehicle traffic. The higher mean ambient levels for toluene for these two stations are similar to those found at two other stations near roadways with heavy traffic in San Francisco, San Jose, and San Rafael. Benzene emissions, which are associated with motor vehicle traffic and with refining operations, are higher than the Bay Area mean only at the Concord station.

Compound	Bay Area Mean Conc. (ppb)	Concord Mean Conc. (ppb)	Crockett Mean Conc. (ppb)	Richmond Mean Conc. (ppb)
Benzene	0.46	0.54	0.20	0.35
Chloroform	0.01	<0.02	<0.02	0.01
Carbon tetrachloride	0.10	0.11	0.11	0.01
Ethylene dibromide	0.01	<0.02	<0.02	<0.02
Ethylene dichloride	0.05	<0.10	<0.10	<0.10
MTBE	0.73	0.54	0.67	0.69
Methylene chloride	0.36	0.26	0.30	0.26

Compound	Bay Area Mean Conc. (ppb)	Concord Mean Conc. (ppb)	Crockett Mean Conc. (ppb)	Richmond Mean Conc. (ppb)
Perchloroethylene	0.06	0.04	0.02	0.06
Toluene	1.24	2.32	0.35	1.92
1,1,1-Trichloroethane	0.12	0.06	0.12	0.02
Trichloroethylene	0.05	0.04	<0.08	0.03
Vinyl chloride	0.15	<0.30	<0.30	<0.30

Two other pollutants for which there are health-based ambient air quality standards are sulfur dioxide and hydrogen sulfide. Sulfur dioxide is created when fossil fuels like petroleum or coal are burned, and the sulfur in the fuel is oxidized to form sulfur oxides. There are California and federal standards for sulfur dioxide, and no Bay Area exceedance of these standards has been recorded for over 25 years. Hydrogen sulfide is a colorless gas with a strong “rotten egg” odor for which California has established an ambient air quality standard. There is no federal standard. Although the State of California has designated one small area in the State as nonattainment for this standard, most areas, including the Bay Area, have not been classified.

The primary purpose of Rule 11 is to monitor the gases sent to flares at the Bay Area petroleum refineries. This monitoring is intended to help determine emissions of VOCs that contribute to ozone formation and of sulfur compounds that may cause odor problems and lung irritation. Though ozone problems arise primarily from vehicle traffic associated with urban development, stationary sources like refineries contribute to the emission inventory. Emissions from flares are thought to vary widely, depending upon the volumetric flow rate of gas sent to the flare, the total volume of gas flared, the composition of the gas, the design and operation of the flare, and other variables like wind speed.

Sensitive land uses, including residences, hospitals, schools, and motels/hotels may adjoin refineries. These land uses are considered sensitive to air pollutants because people are often situated in these areas for extended periods of time.

Regulatory Setting

At the federal level, the federal Clean Air Act (CAA) Amendments of 1990 give EPA additional authority to require states to reduce emissions of ozone precursors and PM10 in nonattainment areas. The amendments set new attainment deadlines based on the severity of problems. At the state level, CARB has traditionally established state ambient air quality standards, maintained oversight authority in air quality planning, developed programs for reducing emissions from motor vehicles, developed air emission inventories, collected air quality and meteorological data, and approved state implementation plans. At a more local level, California’s air districts (e.g., BAAQMD) are responsible for overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing

agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA.

Bay Area Air Quality Management District

BAAQMD regulates air contaminants from stationary sources. BAAQMD is governed by a 21-member Board of Directors composed of publicly elected officials apportioned according to the population of the represented counties. The Board has the authority to develop and enforce regulations for the control of air pollution within its jurisdiction. The BAAQMD is responsible for implementing emissions standards and other requirements of federal and state laws. It is also responsible for developing planning document required by both federal and state law.

The proposed rule implements control measure SS-15 from the BAAQMD's most recent plan for the federal ozone standard, the Bay Area 2001 Ozone Attainment Plan (2001 Plan). The 2001 Plan was developed in response EPA's partial disapproval of the Bay Area 1999 Plan and finding of failure to attain the national ozone standard. In response to EPA's findings, BAAQMD, the Metropolitan Transportation Commission, and the Association of Bay Area Governments prepared the 2001 Plan, which includes a strategy to meet applicable federal Clean Air Act planning requirements, to address deficiencies in the 1999 Plan, and to attain the 1-hour NAAQS for ozone in the Bay Area. Part of the strategy is to adopt control measures, such as SS-15. SS-15 would require monitoring of petroleum refinery flares.

Discussion of Impacts

- a–e. The proposed action would result in the installation of flare monitoring at the 5 Bay Area refineries. Though the installation of monitors has no direct effect on flare emissions, the emissions data and public reaction to the data is expected to lead to reductions in emissions of VOCs and sulfur compounds.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES.					
	Would the project:				
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. Regulation 12, Rule 11 would apply to flares at five petroleum refineries located in Contra Costa County and Solano County. These refineries are located in areas zoned for

industrial or commercial land use. Typically, these facilities are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

- a–f. No effects on biological resources are anticipated because the proposed rule would apply to existing refining operations. The flares to be monitored already exist, and minor construction inside the refineries is expected. No construction outside of the refineries is expected. The proposed rule neither requires nor is likely to result in activities that would affect sensitive biological resources. Therefore, there is no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
V. CULTURAL RESOURCES.					
	Would the project:				
a.	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Cultural resources are defined as buildings, sites, structures, or objects that might have historical, architectural, archaeological, cultural, or scientific importance. The State CEQA Guidelines define a significant cultural resource as a “resource listed or eligible for listing on the California Register of Historical Resources” (Public Resources Code Section 5024.1). A project would have a significant impact if it would cause a substantial adverse change in the significance of a historical resource (State CEQA Guidelines Section 15064.5[b]). A substantial adverse change in the significance of a historical resource would result from an action that would demolish or adversely alter the physical characteristics of the historical resource that convey its historical significance and that qualify the resource for inclusion in the CRHR or in a local register or survey that meets the requirements of Public Resources Code Sections 5020.1(k) and 5024.1(g).

The affected refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

- a.-d. No effect on cultural resources is expected because the proposed rule would apply to existing refining operations. The flares to be monitored already exist, and minor construction inside the refineries is expected. No construction outside

of the refineries is expected. The proposed rule neither requires nor is likely to result in activities that would affect cultural resources. Therefore, there is no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
VI. GEOLOGY AND SOILS.				
Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Strong seismic groundshaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. The proposed rule would apply to flares located at refineries within the boundaries of the

BAAQMD. These refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

- a–e. No effect on geology and soils is expected because the proposed rule applies to existing operations in refineries, and no construction outside of existing facilities is expected. The proposed rule neither requires nor is likely to result in activities that would affect geology and soils. Therefore, there is no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS.					
	Would the project:				
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h.	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Oil refineries handle and process large quantities of flammable materials and acutely toxic substances. Accidents involving these substances can result in worker or public exposure to fire, heat, blast from an explosion, or airborne exposure to hazardous substances.

Fires can expose the public or workers to heat. The heat decreases rapidly with distance from the flame and therefore poses a greater risk to refinery workers than to the public. Explosions can generate a shock wave, but the risks from explosion also decrease with distance. Airborne releases of hazardous materials may affect workers or the public, and the risks depend upon the location of the release, the hazards associated with the material, the winds at the time of the release, and the proximity of receptors.

For all refineries, risks to the public are reduced if there is a buffer zone between process units and residences or if prevailing winds blow away from residences. Thus, the risks posed by operations at a given refinery are unique and determined by a variety of factors.

Regulatory Setting

Refineries and other facilities that handle hazardous materials are heavily regulated to reduce risks to workers and to the public. The following summarizes the primary laws and regulations that apply.

Federal Regulations

Two key federal regulations that focus on the risks from hazardous materials are described below.

U.S. Occupational Safety and Health Administration (OSHA) Process Safety Management (PSM) Rule

The Process Safety Management (PSM) of Highly Hazardous Chemicals (HHC's) standard (29 CFR 1910.119) is intended to prevent or minimize the consequences of a catastrophic release of toxic, reactive, flammable or explosive chemicals from a process. The PSM rule requires compilation of written process safety information, including hazard information on HHC's, technology information and equipment information on covered processes. The rule specifies that process hazard analyses must be conducted for each covered process. Operating procedures must be in writing and must provide clear instructions for safely conducting activities. The procedures must include steps for each operating phase, operating limits, safety and health considerations, and a description of safety systems and their functions. The procedures must be readily accessible to employees who work on or maintain a covered process, and must be reviewed as often as necessary to assure they reflect current operating practice. The procedures must address

safe work practices for special circumstances such as lockout/tagout and confined space entry.

U.S. EPA Accidental Release Prevention/Risk Management Plan (RMP) Rule

Clean Air Act section 112(r) is intended to prevent accidental releases of regulated substances and other extremely hazardous substances to the air and to minimize the consequences of such releases if they do occur by emphasizing preventative measures for those chemicals which are believed to pose the greatest risk. The Accidental Release Prevention Program rule that implements section 112(r) focuses on accident prevention efforts primarily at the local level with a goal of government and the public working with industry to reduce risk. The rule requires the identification of hazards within a facility which could result in a release, use of design and maintenance practices to ensure safety, and the development of response actions to be taken in the event of a release. Sources subject to the rule must submit a risk management plan (RMP) which includes an offsite consequence analysis, a five-year accident history, and a compliance certification.

State Regulations

The primary California laws that apply to chemical hazards are listed below.

The California Accidental Release Prevention (CalARP) Program

The California Accidental Release Prevention (CalARP) Program is a merging of the federal and state programs for the prevention of accidental release of regulated toxic and flammable substances. Pursuant to Health and Safety Code sections 25531 to 25543.3, the California Office of Emergency Services(OES) adopted implementing regulations and sought delegation of the federal RMP program. The OES regulations incorporate elements of the federal Risk Management Program into state regulations and eliminate the need for separate federal and California chemical risk management programs.

The California OSHA Injury and Illness Prevention Program

Every California employer must establish, implement and maintain a written Injury and Illness Prevention (IIP) Program, and a copy must be maintained at each workplace or at a central worksite. The requirements for establishing, implementing, and maintaining an effective program are found in Title 8 of the California Code of Regulations, beginning at section 3203. The regulations require that a program include these elements:

- Identification of the person or persons with responsibility for implementing the program.

- A system for identifying and evaluating workplace hazards, including scheduled, periodic inspections and unscheduled inspections to identify unsafe conditions and work practices.
- Methods and procedures to correct unsafe or unhealthy conditions and work practices.
- An occupational health and safety training program to instruct employees in general safety practices and in practices to address the hazards unique to each employee's job assignment.
- A system for communicating with employees on occupational health and safety matters.
- A strategy for ensuring that employees employ safe and healthy work practices.

Emergency Services Act

Under the Emergency Services Act, the state developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. The office coordinates the responses of other agencies, including the U.S. Environmental Protection Agency, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

Local Regulations - Contra Costa County Industrial Safety Ordinance

Contra Costa County has adopted an industrial safety ordinance that addresses the human factors that lead to accidents. The ordinance requires stationary sources to develop a written human factors program that includes the following:

- Consideration of human factors in the process hazards analysis process;
- Consideration of human systems as causal factors in the incident investigation process for major accidents or releases or for incidents that could have led to a major accident or release;
- Training of employees in the human factors program;
- Operating procedures;
- Management of changes in staffing, staffing levels, or organization in operations or emergency response;
- Participation of employees and their representatives in the development of the written human factors program;
- Development of a program that includes issues such as staffing, shiftwork and overtime; and

- Incorporation of the human factors program description in the facility safety plan.

Discussion of Impacts

a. The proposed flare monitoring rule does not affect in any way the transport of hazardous materials into, out of, or within any of the refineries. There is therefore no impact.

b,c. Flares serve as a fundamental component of each refinery's safety relief system and serve to burn gases generated during emergency events, such as power and equipment failures, and during process upsets or accidents. They are also used during startup and shutdown activities and during maintenance activities when gases that would normally be burned to heat refinery process vessels must be flared instead because the process vessels have been taken out of service, are not yet up to operating temperature, or are being maintained. To a lesser extent, flares serve as a control device for gases that cannot be recovered and used in the refinery fuel gas system. This may occur when the heating value of the gas stream is insufficient for such use, when the stream is intermittent, or when the stream exceeds what is necessary to satisfy refinery combustion needs. Flaring of gases under all of these circumstances prevents their direct release to the atmosphere and reduces the environmental impact of the gases.

The proposed rule would require the installation of flare monitoring equipment on flare headers. These flare headers range in size up to 48 inches in diameter. Because of the importance of the flare system as a safety device, refinery managers are reluctant to take flares out of service. However, installation of the monitoring equipment mandated by the rule will require cutting and welding on flare headers. In some case, it may be possible to take a flare out of service to do this work. In such a case, installation of the equipment should pose no special risk beyond the normal risk of construction activities.

In some cases, monitoring equipment will probably be installed using a procedure called a "hot tap." This term is used to describe tapping or tying into a line that is pressurized without shutting down the line and draining liquids or purging gases. This is considered hazardous nonroutine maintenance. Yet it is commonly conducted within refineries, and there is an extensive body of legal requirements, safety guidelines, industry practice guides, and other guides to ensure that such work is conducted safely.

The OSHA Process Safety Management (PSM) rule (discussed above under "Regulatory Setting") requires process hazard analysis and the development of procedures for activities like hot tapping. The procedures must be in writing and must provide clear instructions for safely conducting activities. The non-mandatory appendix in the PSM rule stresses the importance of identifying the hazards of nonroutine maintenance in process areas and communicating such hazards to those doing the work. Each Bay Area refinery is required to comply with the PSM rule, and each refinery has safety practices and procedures in place to guide activities like hot tapping. Similarly, the EPA Risk Management Plan (RMP) rule requires the identification of hazards and the use of safe maintenance practices. The CalARP and Cal-OSHA programs discussed under "Regulatory Setting" also impose similar requirements. The Contra Costa Industrial Safety Ordinance requires, in addition, a human factors approach to these issues.

In general, the refining industry relies heavily on guides developed by the American Petroleum Institute (API) to establish appropriate procedures for this type of work. For hot work of any type, API states that the potential hazards should be carefully analyzed as part of pre-job safety planning (API, 1995b; pp. 2-3). API has also developed a guide specifically for hot tapping called *Procedures for Welding or Hot Tapping on Equipment in Service* (API Recommended Practice 2201, Fourth Edition, 1995). The API guide for hot tapping sets out extensive guidance on the process to be followed and recommends:

- Hot tapping should only be carried out after careful consideration of alternatives.
- All equipment to be used in performing the hot tap and the piping and other equipment to be hot tapped should be carefully inspected and tested.
- Metallurgy of piping should be carefully considered.
- The connection should be designed to meet applicable codes.
- A written plan that addresses potential hazards should be developed.
- Hazards that may be introduced by the new connection should be considered.
- Only qualified and skilled personnel should be used.
- Potential exposure to toxics from the hot tapping procedure should be considered.
- Appropriate welding procedures should be used.
- Manufacturers instructions should be followed for hot tapping equipment.

The extensive nature of the regulations and guidelines that cover hot tapping, the availability of alternatives in many cases, and the extensive refinery experience with these practices is expected to reduce any impacts from any hot tapping or other work required for installation of monitors to a less-than-significant level.

d-f, h. The installation of monitoring equipment will occur within existing refineries and will not result in any new construction or the location of structures or equipment in any of the areas noted. There is no impact.

g. The proposed rule will not result in any construction or alteration that could affect in any way the ability to respond to an emergency or evacuate a facility. No impacts are anticipated.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY.					
	Would the project:				
a.	Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h.	Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
j.	Contribute to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. Regulation 12, Rule 11 would apply to flares located at refineries in Contra Costa County and Solano County. The refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

a. The refineries affected by the proposed rule have programs to monitor water quality. The requirement to monitor gas flows to the refinery flares in no way affects water quality monitoring. There are no impacts.

b-h. The refineries affected by the rule are located in industrial and commercial areas. No construction either within or outside of the refineries is expected. The refineries will comply with the proposed rule by installing equipment on existing piping within the refineries. There are no impacts.

i, j. The refineries affected by the rule are located in industrial and commercial areas. No construction either within or outside of the refineries is expected. There are no activities expected that could affect flooding or inundation. No impacts are anticipated.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
IX. LAND USE AND PLANNING.					
	Would the project:				
a.	Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. Regulation 12, Rule 11 would apply to flares located at refineries in Contra Costa County and Solano County. The refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

- a–c. The project would occur in already developed commercial and industrial areas and within existing facilities, and the rule neither requires nor is likely to result in construction inside or outside those facilities. No impacts are anticipated.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
X.	MINERAL RESOURCES.				
	Would the project:				
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. Regulation 12, Rule 11 would apply to flares located at refineries in Contra Costa County and Solano County. The refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

- a–b. The proposed rule is not associated with any action that would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. The proposed rule is not expected to result in construction outside any existing facility. Therefore, there is no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
XI. NOISE.					
	Would the project:				
a.	Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. Regulation 12, Rule 11 would apply to flares located at refineries in Contra Costa County and Solano County. The refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

- a-f. The refineries affected by the proposed rule are located in industrial and commercial areas. The proposed rule will require the installation of monitoring equipment on flare piping and will not alter noise levels either within or outside of the refineries. No impacts are anticipated.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
XII. POPULATION AND HOUSING.					
	Would the project:				
a.	Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. Regulation 12, Rule 11 would apply to flares located at refineries in Contra Costa County and Solano County. The refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

- a–c. The proposed rule is not expected to result in the construction of new facilities or the displacement of housing or people. Implementation of the proposed rule will result in very minor modifications at refineries. These modifications would not induce growth or displace housing or people in any way. The proposed rule will not induce population growth or related housing development. There is no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
XIII. PUBLIC SERVICES.				
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. Regulation 12, Rule 11 would apply to flares located at refineries in Contra Costa County and Solano County. The refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Given the large area covered by the BAAQMD, public services are provided by a wide range of entities. Fire protection and police protection/law enforcement services within the BAAQMD is provided by various districts, organizations, and agencies. There are several school districts, private schools, and park departments within the BAAQMD. Public facilities within the BAAQMD are managed by different county, city, and special-use districts.

Discussion of Impacts

- a. The facilities affected by the proposed rule are not expected to require any new or additional public services. No effects on the need for public services such as police, schools, or public roadway maintenance are expected. However, installation of the monitoring equipment required by the proposed rule may result in the risks associated with “hot tapping,” as discussed above under “Hazards and Hazardous Materials.” The extensive body of regulations and the detailed safety procedures for “hot tapping” required by those regulations are expected to reduce the potential for increased fire hazard and need for fire protection services to a less-than-significant level.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
XIV. RECREATION.					
	Would the project:				
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Given the large area covered by the BAAQMD, there are many recreation areas and districts within the affected area.

Discussion of Impacts

- a–b. No effect on recreation is expected because the proposed rule applies to existing operations in refineries. No construction outside of these facilities is expected. The proposed rule neither requires nor is likely to result in activities that would affect recreation. There is no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
XV. TRANSPORTATION/TRAFFIC.					
	Would the project:				
a.	Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Transportation infrastructure within the BAAQMD ranges from single-lane roadways to multilane interstate highways. Transportation systems between major hubs are located within and outside the BAAQMD, including railroads, airports, waterways, and highways. Localized modes of travel include personal vehicles, busses, bicycles, and walking. Transportation to and from the facilities subject to the proposed rule varies by facility location.

Discussion of Impacts

- a–g. Implementation of the proposed rule is not expected to result in the construction of additional facilities or construction-related modifications to existing facilities. Additional traffic or significant increases of staffing at existing facilities that would result in changes to traffic patterns or levels is not expected. The proposed rule would not involve any activities that would alter air traffic patterns; substantially increase hazards caused by design features; result in inadequate parking capacity; or conflict with adopted policies, plans, or programs supporting alternative transportation. No impacts are expected.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS.					
	Would the project:				
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. The land uses and affected environment vary substantially throughout the area. Regulation 12, Rule 11 would apply to flares located at refineries in Contra Costa County and Solano County. The refineries are located in areas zoned for industrial or commercial land use. Typically, they are surrounded by other commercial and industrial facilities. The expected effect of the proposed rule is to require the installation of additional monitoring equipment within the refineries.

Discussion of Impacts

a-g. The proposed rule will not generate or affect wastewater or solid waste, will not affect stormwater or stormwater drainage, and will not require water or affect water supplies. No increases in demand for public utilities are expected as a result of the proposed rule. No impacts are anticipated.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
XVII. MANDATORY FINDINGS OF SIGNIFICANCE					
a.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion of Impacts

- a. Because of the lack of presence of these resources in the project area and the immediate vicinity, the proposed rule does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. There is no impact.
- b. The monitoring of emissions of VOCs and sulfur compounds from the use of refinery flares is part of a long-term plan to bring the Bay Area into compliance with the federal and state ambient air quality standards for ozone. The only impact mechanism identified is a potential for some hazards during the installation of monitoring equipment, but this impact is considered less than significant. The project does not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in

conjunction with other regulatory control projects. The project does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. There is no impact.

- c. Although it is expected that adoption of the proposed rule will create a net positive environmental benefit through a reduction in flaring and in emissions of VOCs and sulfur, there is a potential for some hazards during the installation of monitoring equipment. Because of the extensive body of regulation that governs these activities, the impact is considered less than significant. This potential adverse impact on humans is temporary. There would be no significant operational impacts; operation of the monitoring equipment is likely to afford refinery operators an opportunity to reduce flaring and associated emissions to the atmosphere. There is no impact.

Chapter 4

References

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